



SEQUENCE LISTING

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<120> Materials and Methods for Detecting, Preventing, and Treating Retroviral Infection

<130> UF-267XC1

<140> US 10/080,772

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<160> 68

<170> PatentIn version 3.1

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<212> DNA

<213> Feline immunodeficiency virus

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<212> DNA

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<212> DNA

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<210> 13

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 13

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agatcgatta tttgtgattt acatggcaga agagaacaat atggatctag taaagaaatt   240
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<210> 14

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 14

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<210> 15

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 15

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atggctaatag taactacagg acgagaacct ggtgatatac cagagaattt agaacagtta 180
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<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 16

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atggctaagt taactacagg acgagaacct ggtgatatac cagagaattt agaacagtta	180
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<210> 17

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 17

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 atggctaata taactacagg acgagaacct ggtgatatac cagagaattt agaacagtta 180


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<210> 18

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 18

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<210> 19

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 19

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<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 20

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<210> 21

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<212> DNA

<213> Feline immunodeficiency virus

<400> 21

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<210> 22

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 22

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Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
50 55 60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Glu His Met Tyr Ala Gln
100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
195 200 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr

225		230		235		240
Gln Glu Gln Gln	Ala Glu Pro Arg Phe	Ala Pro Ala Arg Met	Gln Cys			
	245	250	255			
Arg Ala Trp Tyr	Leu Glu Ala Leu Gly	Lys Leu Ala Ala	Ile Lys Ala			
	260	265	270			
Lys Ser Pro Arg	Ala Val Gln Leu Lys	Gln Gly Ala Lys	Glu Asp Tyr			
	275	280	285			
Ser Ser Phe Ile	Asp Arg Leu Phe Ala	Gln Ile Asp	Gln Glu Gln Asn			
	290	295	300			
Thr Ala Glu Val	Lys Leu Tyr Leu Lys	Gln Ser Leu Ser	Ile Ala Asn			
305	310	315	320			
Ala Asn Pro Asp	Cys Lys Arg Ala Met	Ser His Leu Lys	Pro Glu Ser			
	325	330	335			
Thr Leu Glu Glu	Lys Leu Arg Ala Cys	Gln Glu Val Gly	Ser Pro Gly			
	340	345	350			
Tyr Lys Met Gln	Leu Leu Ala Glu Ala	Leu Thr Arg	Val Gln Thr Val			
	355	360	365			
Gln Thr Arg Gly	Ser Arg Pro Thr Cys	Phe Asn Cys	Lys Lys Pro Gly			
	370	375	380			
His Leu Ala Lys	Gln Cys Arg Glu Ala	Lys Arg Cys	Asn Asn Cys Gly			
385	390	395	400			
Lys Pro Gly His	Leu Ala Ala Asn Cys	Trp Gln Arg Gly	Lys Lys Thr			
	405	410	415			
Pro Gly Asn Gly	Lys Met Gly Pro Ala	Ala Ala Pro Val	Asn Gln Val			
	420	425	430			
Gln Gln Met Val	Pro Ser Ala Pro Pro	Met Glu Asp Arg	Lys Leu Leu			
	435	440	445			
Asp Leu						
450						

<210> 23

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 23

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Ala Ala Val Lys Arg Cys
1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
50 55 60

Cys Asp Leu His Asn Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Glu His Met Tyr Ala Gln
100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
195 200 205

Gln Ile Thr Ala Asp Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225 230 235 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
245 250 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Arg Leu Ala Ala Ile Lys Ala
260 265 270

Lys Pro Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
275 280 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
290 295 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305 310 315 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
325 330 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
340 345 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
355 360 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Pro
 405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 24

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 24

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Ala Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Leu Ile Ile
 50 55 60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
 65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
 85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
 100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu

115					120					125						
Glu	Gly	Pro	Pro	Gln	Ala	Tyr	Pro	Ile	Gln	Thr	Val	Asn	Gly	Ala	Pro	
130					135					140						
Gln	Tyr	Val	Ala	Leu	Asp	Pro	Lys	Met	Val	Ser	Ile	Phe	Met	Glu	Lys	
145					150					155					160	
Ala	Arg	Glu	Gly	Leu	Gly	Gly	Glu	Glu	Val	Gln	Leu	Trp	Phe	Thr	Ala	
165					170					175						
Phe	Ser	Ala	Asn	Leu	Thr	Ser	Thr	Asp	Met	Ala	Thr	Leu	Ile	Met	Ser	
180					185					190						
Ala	Pro	Gly	Cys	Ala	Ala	Asp	Lys	Glu	Ile	Leu	Asp	Glu	Thr	Leu	Lys	
195					200					205						
Gln	Ile	Thr	Ala	Asp	Tyr	Asp	Arg	Thr	His	Pro	Pro	Asp	Gly	Pro	Arg	
210					215					220						
Pro	Leu	Pro	Tyr	Phe	Thr	Ala	Ala	Glu	Ile	Met	Gly	Ile	Gly	Leu	Thr	
225					230					235					240	
Gln	Glu	Gln	Gln	Ala	Glu	Pro	Arg	Phe	Ala	Pro	Ala	Arg	Met	Gln	Cys	
245					250					255						
Arg	Ala	Trp	Tyr	Leu	Glu	Ala	Leu	Gly	Arg	Leu	Ala	Ala	Ile	Lys	Ala	
260					265					270						
Lys	Pro	Pro	Arg	Ala	Val	Gln	Leu	Lys	Gln	Gly	Ala	Lys	Glu	Asp	Tyr	
275					280					285						
Ser	Ser	Phe	Ile	Asp	Arg	Leu	Phe	Ala	Gln	Ile	Asp	Gln	Glu	Gln	Asn	
290					295					300						
Thr	Ala	Glu	Val	Lys	Leu	Tyr	Leu	Lys	Gln	Ser	Leu	Ser	Ile	Ala	Asn	
305					310					315					320	
Ala	Asn	Pro	Asp	Cys	Lys	Arg	Ala	Met	Ser	His	Leu	Lys	Pro	Glu	Ser	
325					330					335						
Thr	Leu	Glu	Glu	Lys	Leu	Arg	Ala	Cys	Gln	Glu	Val	Gly	Ser	Pro	Gly	
340					345					350						

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
 355 360 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
 370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
 385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
 405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 25

<211> 449

<212> PRT

<213> Feline immunodeficiency virus

<400> 25

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Asn Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Glu His Met Tyr Ala Gln
100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
195 200 205

Gln Ile Thr Ala Asp Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225 230 235 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
245 250 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Arg Leu Ala Ala Ile Lys Ala
260 265 270

Lys Pro Pro Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr Ser
275 280 285

Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn Thr
 290 295 300

Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn Ala
 305 310 315 320

Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser Thr
 325 330 335

Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly Tyr
 340 345 350

Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val Gln
 355 360 365

Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly His
 370 375 380

Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly Lys
 385 390 395 400

Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr Pro
 405 410 415

Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val Gln
 420 425 430

Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu Asp
 435 440 445

Leu

<210> 26

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 26

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Ile Lys Arg Cys

1	5	10	15
Ser Asn Val	Ala Val Gly	Val Glu Ser Lys	Ser Arg Lys Phe Glu Lys
	20	25	30
Glu Asn Phe	Arg Trp Ala	Ile Lys Met Ala	Asn Val Thr Thr Gly Arg
	35	40	45
Glu Pro Gly	Asp Ile Pro	Glu Asn Leu Glu	Gln Leu Arg Ser Ile Ile
	50	55	60
Cys Asp Leu	His Asp Arg	Arg Glu Gln Tyr	Gly Ser Ser Lys Glu Ile
	65	70	75
Asp Met Ala	Ile Thr Thr	Leu Lys Val Phe	Ala Val Ala Gly Ile Leu
	85	90	95
Asn Met Thr	Val Ser Thr	Ala Ala Ala	Glu His Met Tyr Ala Gln
	100	105	110
Met Gly Leu	Asp Thr Arg	Pro Ser Ile Lys	Glu Ser Gly Gly Lys Glu
	115	120	125
Glu Gly Pro	Pro Gln Ala	Tyr Pro Ile Gln	Thr Val Asn Gly Ala Pro
	130	135	140
Gln Tyr Val	Ala Leu Asp	Pro Lys Met Val	Ser Ile Phe Met Glu Lys
	145	150	155
Ala Arg Glu	Gly Leu Gly	Gly Glu Glu Val	Gln Leu Trp Phe Thr Ala
	165	170	175
Phe Ser Ala	Asn Leu Thr	Ser Thr Asp Met	Ala Thr Leu Ile Met Ser
	180	185	190
Ala Pro Gly	Cys Ala Ala	Asp Lys Glu Ile	Leu Asp Glu Thr Leu Lys
	195	200	205
Gln Met Thr	Ala Glu Tyr	Asp Arg Thr His	Pro Pro Asp Gly Pro Arg
	210	215	220
Pro Leu Pro	Tyr Phe Thr	Ala Ala Glu Ile	Met Gly Ile Gly Leu Thr
	225	230	235
			240

<210> 27

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 27

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
50 55 60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Val Leu
85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
 180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
 195 200 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
 210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
 225 230 235 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
 245 250 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
 260 265 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
 275 280 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
 290 295 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
 305 310 315 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
 325 330 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
 340 345 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
 355 360 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
 370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
 385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr

405

410

415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 28

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 28

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
 65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
 85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
 100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
 115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
 130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
 145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
 165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
 180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
 195 200 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
 210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
 225 230 235 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
 245 250 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
 260 265 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asn Tyr
 275 280 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
 290 295 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
 305 310 315 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
 325 330 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
 340 345 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
 355 360 365

Gln Thr Arg Gly Ser Arg Ser Thr Cys Phe Asn Cys Lys Lys Pro Gly
 370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
 385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
 405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 29

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 29

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Glu His Met Tyr Ala Gln
100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
195 200 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225 230 235 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
245 250 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
260 265 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
275 280 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn

290

295

300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
 305 310 315 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
 325 330 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
 340 345 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
 355 360 365

Gln Thr Arg Gly Ser Arg Pro Met Cys Phe Asn Cys Lys Lys Pro Gly
 370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
 385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
 405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 30

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 30

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Asp Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
 65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
 85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Glu His Met Tyr Ala Gln
 100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Ser Gly Gly Lys Glu
 115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
 130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
 145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
 165 170 175

Phe Ser Thr Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
 180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
 195 200 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
 210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
 225 230 235 240

Asp Leu
450

<210> 31

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 31

Met	Gly	Asn	Gly	Gln	Gly	Arg	Asp	Trp	Lys	Thr	Ala	Val	Lys	Arg	Cys
1				5					10					15	

Ser	Asn	Val	Ala	Val	Gly	Val	Gly	Ser	Lys	Ser	Arg	Lys	Phe	Gly	Glu
			20					25					30		

Gly	Asn	Phe	Arg	Trp	Ala	Ile	Arg	Met	Ala	Asn	Val	Thr	Thr	Gly	Arg
		35					40					45			

Glu	Pro	Gly	Asp	Ile	Pro	Glu	Asn	Leu	Glu	Gln	Leu	Arg	Ser	Ile	Ile
	50					55					60				

Cys	Asp	Leu	His	Asp	Arg	Arg	Glu	Gln	Tyr	Gly	Ser	Ser	Lys	Glu	Ile
65					70					75					80

Asp	Met	Ala	Ile	Thr	Thr	Leu	Lys	Val	Phe	Ala	Val	Ala	Gly	Ile	Leu
				85					90					95	

Asn	Met	Thr	Val	Ser	Thr	Ala	Ala	Ala	Ala	Glu	His	Met	Tyr	Ala	Gln
			100					105					110		

Met	Gly	Leu	Asp	Thr	Arg	Pro	Ser	Ile	Lys	Glu	Ser	Gly	Gly	Lys	Glu
		115					120					125			

Glu	Gly	Pro	Pro	Gln	Ala	Tyr	Pro	Ile	Gln	Thr	Val	Asn	Gly	Ala	Pro
	130					135					140				

Gln	Tyr	Val	Ala	Leu	Asp	Pro	Lys	Met	Val	Ser	Ile	Phe	Met	Glu	Lys
145					150					155					160

Ala	Arg	Glu	Gly	Leu	Gly	Gly	Glu	Glu	Val	Gln	Leu	Trp	Phe	Thr	Ala
				165					170					175	

Phe	Ser	Ala	Asn	Leu	Thr	Ser	Thr	Asp	Met	Ala	Thr	Leu	Ile	Met	Ser
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

180					185					190					
Ala	Pro	Gly	Cys	Ala	Ala	Asp	Lys	Glu	Ile	Leu	Asp	Glu	Thr	Leu	Lys
		195					200					205			
Gln	Met	Thr	Ala	Glu	Tyr	Asp	Arg	Thr	His	Pro	Pro	Asp	Gly	Pro	Arg
	210					215					220				
Pro	Leu	Pro	Tyr	Phe	Thr	Ala	Ala	Glu	Ile	Met	Gly	Ile	Gly	Leu	Thr
225					230					235					240
Gln	Glu	Gln	Gln	Ala	Glu	Pro	Arg	Phe	Ala	Pro	Ala	Arg	Met	Gln	Cys
				245					250					255	
Arg	Ala	Trp	Tyr	Leu	Glu	Ala	Leu	Gly	Lys	Leu	Ala	Ala	Ile	Lys	Ala
			260					265					270		
Lys	Ser	Pro	Arg	Ala	Val	Gln	Leu	Lys	Gln	Gly	Ala	Lys	Glu	Asp	Tyr
		275					280					285			
Ser	Ser	Phe	Ile	Asp	Arg	Leu	Phe	Ala	Gln	Ile	Asp	Gln	Glu	Gln	Asn
	290					295					300				
Thr	Ala	Glu	Val	Lys	Leu	Tyr	Leu	Lys	Gln	Ser	Leu	Ser	Ile	Ala	Asn
305					310					315					320
Ala	Asn	Pro	Asp	Cys	Lys	Arg	Ala	Met	Ser	His	Leu	Lys	Pro	Glu	Ser
				325					330					335	
Thr	Leu	Glu	Glu	Lys	Leu	Arg	Ala	Cys	Gln	Glu	Val	Gly	Ser	Pro	Gly
			340					345					350		
Tyr	Lys	Met	Gln	Leu	Leu	Ala	Glu	Ala	Leu	Thr	Arg	Val	Gln	Thr	Val
		355					360					365			
Gln	Thr	Arg	Gly	Ser	Arg	Pro	Thr	Cys	Phe	Asn	Cys	Lys	Lys	Pro	Gly
	370					375					380				
His	Leu	Ala	Lys	Gln	Cys	Arg	Glu	Ala	Lys	Arg	Cys	Asn	Asn	Cys	Gly
385					390					395					400
Lys	Pro	Gly	His	Leu	Ala	Ala	Asn	Cys	Trp	Gln	Arg	Gly	Lys	Lys	Thr
				405					410					415	

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 32

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 32

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
 65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
 85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
 100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
 115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
 130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
 145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
 165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
 180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
 195 200 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
 210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
 225 230 235 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
 245 250 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
 260 265 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
 275 280 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
 290 295 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
 305 310 315 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
 325 330 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
 340 345 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
 355 360 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
 370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
 385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
 405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 33

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 33

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile

65					70						75					80
Asp	Met	Ala	Ile	Thr	Thr	Leu	Lys	Val	Phe	Val	Val	Ala	Gly	Ile	Leu	
				85					90					95		
Asn	Met	Thr	Val	Ser	Thr	Ala	Ala	Ala	Ala	Glu	His	Met	Tyr	Ala	Gln	
			100					105					110			
Met	Gly	Leu	Asp	Thr	Arg	Pro	Ser	Ile	Lys	Glu	Gly	Gly	Gly	Lys	Glu	
		115					120					125				
Glu	Gly	Pro	Pro	Gln	Ala	Tyr	Pro	Ile	Gln	Thr	Val	Asn	Gly	Ala	Pro	
	130					135					140					
Gln	Tyr	Val	Ala	Leu	Asp	Pro	Lys	Met	Val	Ser	Ile	Phe	Met	Glu	Lys	
145					150					155					160	
Ala	Arg	Glu	Gly	Leu	Gly	Gly	Glu	Glu	Val	Gln	Leu	Trp	Phe	Thr	Ala	
				165					170					175		
Phe	Ser	Ala	Asn	Leu	Thr	Ser	Thr	Asp	Met	Ala	Thr	Leu	Ile	Met	Ser	
			180					185					190			
Ala	Pro	Gly	Cys	Ala	Ala	Asp	Lys	Glu	Ile	Leu	Asp	Glu	Thr	Leu	Lys	
		195					200					205				
Gln	Met	Thr	Ala	Glu	Tyr	Asp	Arg	Thr	His	Pro	Pro	Asp	Gly	Pro	Arg	
	210					215					220					
Pro	Leu	Pro	Tyr	Phe	Thr	Ala	Ala	Glu	Ile	Met	Gly	Ile	Gly	Leu	Thr	
225					230					235					240	
Gln	Glu	Gln	Gln	Ala	Glu	Pro	Arg	Phe	Ala	Pro	Ala	Arg	Met	Gln	Cys	
				245					250					255		
Arg	Ala	Trp	Tyr	Leu	Glu	Ala	Leu	Gly	Lys	Leu	Ala	Ala	Ile	Lys	Ala	
			260					265					270			
Lys	Ser	Pro	Arg	Ala	Val	Gln	Leu	Lys	Gln	Gly	Ala	Lys	Glu	Asp	Tyr	
		275					280					285				
Ser	Ser	Phe	Ile	Asp	Arg	Leu	Phe	Ala	Gln	Ile	Asp	Gln	Glu	Gln	Asn	
	290					295					300					

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
305 310 315 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
325 330 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
340 345 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
355 360 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
435 440 445

Asp Leu
450

<210> 34

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 34

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
50 55 60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Glu His Met Tyr Ala Gln
100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
195 200 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
225 230 235 240

<210> 35

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 35

Met	Gly	Asn	Gly	Gln	Gly	Arg	Asp	Trp	Lys	Thr	Ala	Val	Lys	Arg	Cys
1				5					10					15	

Ser	Asn	Val	Ala	Val	Gly	Val	Gly	Ser	Lys	Ser	Arg	Lys	Phe	Gly	Glu
			20					25					30		

Gly	Asn	Phe	Arg	Trp	Ala	Ile	Arg	Met	Ala	Asn	Val	Thr	Thr	Gly	Arg
		35					40					45			

Glu	Pro	Gly	Asp	Ile	Pro	Glu	Asn	Leu	Glu	Gln	Leu	Arg	Ser	Ile	Ile
	50					55					60				

Cys	Asp	Leu	His	Gly	Arg	Arg	Glu	Gln	Tyr	Gly	Ser	Ser	Lys	Glu	Ile
65					70					75					80

Asp	Met	Ala	Ile	Thr	Thr	Leu	Lys	Val	Phe	Ala	Val	Ala	Gly	Ile	Leu
				85					90					95	

Asn	Met	Thr	Val	Ser	Thr	Ala	Ala	Ala	Ala	Glu	His	Met	Tyr	Ala	Gln
			100					105					110		

Met	Gly	Leu	Asp	Thr	Arg	Pro	Ser	Ile	Lys	Glu	Gly	Gly	Gly	Lys	Glu
		115					120					125			

Glu	Gly	Pro	Pro	Gln	Ala	Tyr	Pro	Ile	Gln	Thr	Val	Asn	Gly	Ala	Pro
	130					135						140			

Gln	Tyr	Val	Ala	Leu	Asp	Pro	Lys	Met	Val	Ser	Ile	Phe	Met	Glu	Lys
145					150					155					160

Ala	Arg	Glu	Gly	Leu	Gly	Gly	Glu	Glu	Val	Gln	Leu	Trp	Phe	Thr	Ala
				165					170					175	

Phe	Ser	Ala	Asn	Leu	Thr	Ser	Thr	Asp	Met	Ala	Thr	Leu	Ile	Met	Ser
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

180	185	190
Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys		
195	200	205
Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg		
210	215	220
Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr		
225	230	235
Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys		
245	250	255
Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala		
260	265	270
Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr		
275	280	285
Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn		
290	295	300
Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn		
305	310	315
Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser		
325	330	335
Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly		
340	345	350
Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val		
355	360	365
Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly		
370	375	380
His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly		
385	390	395
Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr		
405	410	415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Gly Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 36

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 36

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
 65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
 85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
 100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
 115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
 130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
 145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
 165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
 180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
 195 200 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
 210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
 225 230 235 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Arg Cys
 245 250 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
 260 265 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
 275 280 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
 290 295 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
 305 310 315 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
 325 330 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
 340 345 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
 355 360 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
 370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
 385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
 405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 37

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 37

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile

65		70		75		80									
Asp	Met	Ala	Ile	Thr	Thr	Leu	Lys	Val	Phe	Ala	Val	Ala	Gly	Ile	Leu
				85					90					95	
Asn	Met	Thr	Val	Ser	Thr	Ala	Ala	Ala	Ala	Glu	His	Met	Tyr	Ala	Gln
			100					105					110		
Met	Gly	Leu	Asp	Thr	Arg	Pro	Ser	Ile	Lys	Glu	Gly	Gly	Gly	Lys	Glu
		115					120					125			
Glu	Gly	Pro	Pro	Gln	Ala	Tyr	Pro	Ile	Gln	Thr	Val	Asn	Gly	Ala	Pro
	130					135					140				
Gln	Tyr	Val	Ala	Leu	Asp	Pro	Lys	Met	Val	Ser	Ile	Phe	Met	Glu	Lys
145					150					155					160
Ala	Arg	Glu	Gly	Leu	Gly	Gly	Glu	Glu	Val	Gln	Leu	Trp	Phe	Thr	Ala
				165					170					175	
Phe	Ser	Ala	Asn	Leu	Thr	Ser	Thr	Asp	Met	Ala	Thr	Leu	Ile	Met	Ser
			180					185					190		
Ala	Pro	Gly	Cys	Ala	Ala	Asp	Lys	Glu	Ile	Leu	Asp	Glu	Thr	Leu	Lys
		195					200					205			
Gln	Met	Thr	Ala	Glu	Tyr	Asp	Arg	Thr	His	Pro	Pro	Asp	Gly	Pro	Arg
	210					215					220				
Pro	Leu	Pro	Tyr	Phe	Thr	Ala	Ala	Glu	Ile	Met	Gly	Ile	Gly	Leu	Thr
225					230					235					240
Gln	Glu	Gln	Gln	Ala	Glu	Pro	Arg	Phe	Ala	Pro	Ala	Arg	Met	Gln	Cys
				245					250					255	
Arg	Ala	Trp	Tyr	Leu	Glu	Ala	Leu	Gly	Lys	Leu	Ala	Ala	Ile	Lys	Ala
			260					265					270		
Lys	Ser	Pro	Arg	Ala	Val	Gln	Leu	Lys	Gln	Gly	Ala	Lys	Glu	Asp	Tyr
		275					280					285			
Ser	Ser	Phe	Ile	Asp	Arg	Leu	Phe	Ala	Gln	Ile	Asp	Gln	Glu	Gln	Asn
		290				295					300				

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
 305 310 315 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
 325 330 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
 340 345 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
 355 360 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
 370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
 385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
 405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 38

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 38

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asp Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
 65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
 85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
 100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
 115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
 130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
 145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
 165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
 180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
 195 200 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
 210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
 225 230 235 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
 245 250 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
 260 265 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
 275 280 285

Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
 290 295 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
 305 310 315 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
 325 330 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
 340 345 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
 355 360 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
 370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
 385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
 405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Ala Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 39

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 39

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asp Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
 65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
 85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Glu His Met Tyr Ala Gln
 100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
 115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
 130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
 145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
 165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser

180	185	190
Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys		
195	200	205
Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg		
210	215	220
Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr		
225	230	235
Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys		
245	250	255
Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala		
260	265	270
Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr		
275	280	285
Ser Ser Phe Ile Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn		
290	295	300
Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn		
305	310	315
Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser		
325	330	335
Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly		
340	345	350
Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val		
355	360	365
Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly		
370	375	380
His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly		
385	390	395
Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr		
405	410	415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Ala Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 40

<211> 450

<212> PRT

<213> Feline immunodeficiency virus

<400> 40

Met Gly Asn Gly Gln Gly Arg Asp Trp Lys Thr Ala Val Lys Arg Cys
 1 5 10 15

Ser Asn Val Ala Val Gly Val Gly Ser Lys Ser Arg Lys Phe Gly Glu
 20 25 30

Gly Asn Phe Arg Trp Ala Ile Arg Met Ala Asn Val Thr Thr Gly Arg
 35 40 45

Glu Pro Gly Asp Ile Pro Glu Asn Leu Glu Gln Leu Arg Ser Ile Ile
 50 55 60

Cys Asp Leu His Gly Arg Arg Glu Gln Tyr Gly Ser Ser Lys Glu Ile
 65 70 75 80

Asp Met Ala Ile Thr Thr Leu Lys Val Phe Ala Val Ala Gly Ile Leu
 85 90 95

Asn Met Thr Val Ser Thr Ala Ala Ala Ala Glu His Met Tyr Ala Gln
 100 105 110

Met Gly Leu Asp Thr Arg Pro Ser Ile Lys Glu Gly Gly Gly Lys Glu
 115 120 125

Glu Gly Pro Pro Gln Ala Tyr Pro Ile Gln Thr Val Asn Gly Ala Pro
 130 135 140

Gln Tyr Val Ala Leu Asp Pro Lys Met Val Ser Ile Phe Met Glu Lys
 145 150 155 160

Ala Arg Glu Gly Leu Gly Gly Glu Glu Val Gln Leu Trp Phe Thr Ala
 165 170 175

Phe Ser Ala Asn Leu Thr Ser Thr Asp Met Ala Thr Leu Ile Met Ser
 180 185 190

Ala Pro Gly Cys Ala Ala Asp Lys Glu Ile Leu Asp Glu Thr Leu Lys
 195 200 205

Gln Met Thr Ala Glu Tyr Asp Arg Thr His Pro Pro Asp Gly Pro Arg
 210 215 220

Pro Leu Pro Tyr Phe Thr Ala Ala Glu Ile Met Gly Ile Gly Leu Thr
 225 230 235 240

Gln Glu Gln Gln Ala Glu Pro Arg Phe Ala Pro Ala Arg Met Gln Cys
 245 250 255

Arg Ala Trp Tyr Leu Glu Ala Leu Gly Lys Leu Ala Ala Ile Lys Ala
 260 265 270

Lys Ser Pro Arg Ala Val Gln Leu Lys Gln Gly Ala Lys Glu Asp Tyr
 275 280 285

Ser Ser Phe Thr Asp Arg Leu Phe Ala Gln Ile Asp Gln Glu Gln Asn
 290 295 300

Thr Ala Glu Val Lys Leu Tyr Leu Lys Gln Ser Leu Ser Ile Ala Asn
 305 310 315 320

Ala Asn Pro Asp Cys Lys Arg Ala Met Ser His Leu Lys Pro Glu Ser
 325 330 335

Thr Leu Glu Glu Lys Leu Arg Ala Cys Gln Glu Val Gly Ser Pro Gly
 340 345 350

Tyr Lys Met Gln Leu Leu Ala Glu Ala Leu Thr Arg Val Gln Thr Val
 355 360 365

Gln Thr Arg Gly Ser Arg Pro Thr Cys Phe Asn Cys Lys Lys Pro Gly
 370 375 380

His Leu Ala Lys Gln Cys Arg Glu Ala Lys Arg Cys Asn Asn Cys Gly
 385 390 395 400

Lys Pro Gly His Leu Ala Ala Asn Cys Trp Gln Arg Gly Lys Lys Thr
 405 410 415

Pro Gly Asn Gly Lys Met Gly Pro Ala Ala Ala Pro Val Asn Gln Val
 420 425 430

Gln Gln Met Val Pro Ser Ala Pro Pro Met Glu Asp Arg Lys Leu Leu
 435 440 445

Asp Leu
 450

<210> 41

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 41
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 atggctaagt taactacagg acgagaacct ggtgatatac cagagaattt agaacagtta 180
 agatcgatta tttgtgattt acatggcaga agagaacaat atggatctag taaagaaatt 240
 gatatggcaa ttaccacttt aaaagttttt gcagtagctg gaatttttaa tatgactgtg 300
 tctactgccg cagcagctga acacatgtat gctcagatgg gattagatac cagaccatct 360
 ataaaagaag gtgggggaaa agaagaagga cctccacagg cttatcctat tcaaacagta 420
 aatggagcac cacagtatgt agcccttgac ccaaaaatgg tgtccatctt tatggaaaaa 480
 gcaagagagg ggctaggagg tgaggaggtc caactgtggt tcacagcctt ttctgctaatt 540


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ttaacttcaa ctgatatggc tacattaatt atgtctgcg cctggctgtgc agcagataaa      600
gagatcttag atgaaacact gaaacagatg acagctgagt atgatcgtac tcatcctcct      660
gatgggccta gaccgctgcc ctatttcacc gctgcggaga ttatgggaat aggattaact      720
caagaacaac aagcggagcc cagatttgca ccagctagaa tgcagtgtag agcatgggtat      780
cttgaagcac taggaaagtt ggagccata aaagctaaat ctccccgagc agtgcaattg      840
aagcaaggag ctaaagagga ttattcctca tttatagata gattatttgc tcaaatagat      900
caagagcaga acacagctga agtaaagctg tattttaaac aatctttgag catagccaat      960
gctaaccagg attgtaaaag ggcaatgagt catcttaaac cagagagtac tttagaggaa     1020
aaactgagag cctgtcaaga ggtaggatca ccaggatata aaatgcagtt gttagcagaa     1080
gctcttaciaa ggggttcagac agttcaaaca agaggatcta gaccaacgtg tttcaattgt     1140
aaaaaaccag gccacctggc caaacaatgt agagaagcaa agagatgtaa caactgtgga     1200
aaacctggtc acttagctgc taattgctgg caaagaggta aaaaaacccc gggaaacggg     1260
aagatggggc cagctgcagc cccggtaaac caagtgcagc aaatgggtgcc atctgcacct     1320
ccaatggaag acaggaaatt gttagattta taa                                  1353

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<210> 42

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

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<400> 42
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atggctaattg taactacagg acgagaacct ggtgatatac cagagaattt agaacagtta     180
agatcgatta tttgtgattt acatgacaga agagaacaat atggatctag taaagaaatt     240
gatatggcaa ttaccacttt aaaagttttt gcagtagctg gaattttaaa tatgactgtg     300
tctactgccg cagcagctga acacatgtat gctcagatgg gattagatac cagaccatct     360
ataaaagaaa gtgggggaaa agaagaagga cctccacagg cttatcctat tcaaacagta     420
aatggagcac cacagtatgt agcccttgac ccaaaaatgg tgtccatttt tatggaaaaa     480
gcaagagagg ggctaggagg tgaggaggtc caactgtggt tcacagcctt ttctgctaatt     540

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ttaacttcaa ctgatatggc tacattaatt atgtctgctg ctggctgtgc agcagataaa 600
gagatcttag atgaaacact gaaacagatg acagctgagt atgatcgtac tcatcctcct 660
gatgggccta gaccgctgcc ctatttcacc gctgcggaga ttatgggaat aggattaact 720
caagaacaac aggcggagcc cagatttgca ccagctagaa tgcagtgtag agcatggtat 780
cttgaagcac taggaaagtt ggcagccata aaagctaaat ctccccgagc agtgcaatta 840
aagcaaggag ctaaagagga ttattcctca tttatagata gattatttgc tcaaatagat 900
caagagcaga acacagctga agtaaagctg tattttaaac aatctttgag catagccaat 960
gctaaccagc attgtaaaag ggcaatgagt catcttaaac cagagagtac tttagaggaa 1020
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aaacctggtc acttagctgc taattgctgg caaagaggta aaaaaacccc gggaaacggg 1260
aagatggggc cagctgcagc cccggtaaac caagtgcagc aaatgggtgcc atctgcacct 1320
ccaatggaag acaggaaatt gttagattta taa 1353

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<210> 43

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 43

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atggctaatt tatctacagg acgagaacct ggtgatatac cagagacttt agatcaacta 180
aggttgggta tttgcgattt acaagaaaga agagaaaaat ttggatctag caaagaaatt 240
gatatggcaa ttgtgacatt aaaagtcttt gcggtagcag gactttttaa tatgacgggtg 300
tctactgctg ctgcagctga aaatatgtat tctcaaattg gattagacac taggccatct 360
atgaaagaag caggtggaaa agaggaaggc cctccacagg catatcctat tcaaacagta 420
aatggagtac cacaatatgt agcacttgac ccaaaaatgg tgtccatttt tatggaaaag 480

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gcaagagaag gactaggagg tgaggaagtt caactatggt ttactgcctt ctctgcaa	540
ttaacaccta ctgacatggc cacattaata atggccgcac caggggtgcgc tgcagataaa	600
gaaatattgg atgaaagctt aaagcaactg acagcagaat atgatcgcac acatccccct	660
gatgctccca gaccattacc ctatcttact gcagcagaaa ttatgggtat aggattaact	720
caagaacaac aagcagaagc aagatttgca ccagctagga tgcagtgtag agcatgggtat	780
ctcgaggcat taggaaaatt ggctgccata aaagctaagt ctctcgagc tgtgcagtta	840
agacaaggag ctaaggaaga ttattcatcc tttatagaca gattgtttgc ccaaatagat	900
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gctaattgcag actgtaaaaa ggcaatgagc caccttaagc cagaaagtac cctagaagaa	1020
aagttgagag cttgtcaaga aataggctca ccaggatata aaatgcaact cttggcagaa	1080
gctcttacia aagttcaagt agtgcaatca aaaggatctg gaccagtgtg ttttaattgt	1140
aaaaaaccag gacatctagc aagacaatgt agagaagtga aaaaatgtaa taaatgtgga	1200
aaacctggtc atgtagctgc caattgttgg caaggaaata gaaagaattc gggaaactgg	1260
aaggcggggc gagctgcagc cccagtgaat caaatgcagc aagcagtaat gccatctgca	1320
cctccaatgg aggagaaact attggattta taa	1353

<210> 44

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<400> 44

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atggctaattg tatctacagg acgagaacct ggtgatatac cagagacttt agatcaactg	180
aggttggtta tttgcgattt acaagaaaga agagaaaaat ttggatctag caaagaaatt	240
gatatggcaa ttaccacctt aaaagttttt gcagtagtgg gactttttaa tatgacagt	300
tctactgctg ctgcagctga aaatatgtat actcagatgg gattagacac tagaccatct	360
acaaaggaag ctggaggaaa agaggaaggc cctccacagg catatcctat tcaaacagta	420
aatggagcac cacaatatgt agctcttgac caaaaaatgg tgtctatttt catggaaaag	480

gcaagagaag ggtaggagg tgaagaagtt caactatggt tcacagcctt ctctgcaaatt 540
 ttaacaccta ctgacatggc cacattaata atggccgcac caggggtgcgc tgcagataaa 600
 gaaatattgg atgaaagctt aaagcaaata acagcagaat atgatcgtac acatccccct 660
 gatggtccta gaccattacc atatcttact gcggcagaga ttatgggtat aggattaact 720
 caagaacaac aagcagaagc aagatttgca ccagctagga tgcagtgtag agcatgggtat 780
 cttgaggcat taggaaaatt ggccgccata aaagctaagt ctctcgcagc tgtacagtta 840
 agacaaggag cttaaagaaga ttattcatcc tttatagaca gattgtttgc ccaaatagat 900
 caagaacaaa atacagctga agttaagata tatctaaaac agtcattaag catggctaatt 960
 gctaattgcag aatgcaaaaa ggcaatgagt catcttaagc cagaaagttc cctagaagaa 1020
 aagttgagag cctgtcaaga gataggatcc ccaggatata aaatgcaact cttggcagaa 1080
 gctcttaciaa aagttcaagt agtgcaatca aaaggatcag gaccagtgtg ttttaattgt 1140
 aaaaaaccgg ggcatctagc aagacagtgt agagatgtga aaaaatgtaa taaatgtgga 1200
 agacctggtc atttagctgc cagatgctgg caggggtgga aaaagaactc gggaaactgg 1260
 aaggcggggc gagctgcagc ccagtaaac caagtgcagc aggagtaatt gccatctgca 1320
 cctccaatgg aggagagact attggattta taa 1353

<210> 45

<211> 1200

<212> DNA

<213> Feline immunodeficiency virus

<400> 45

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 gtaggagtag gggggaagag taaaaaattt ggagagggga attttagggtg ggccataaga 120
 atggctaatt tatctacagg acgagaacct ggtgatatac cagagacttt agatcaatta 180
 aggttggtta tttgcgattt acaagaaaga agagaaaaat ttggatctag caaagaaatt 240
 gacatggcaa ttacaacatt aaaagtcttt gcagtagtgg gacttttaaa tatgacagtg 300
 tctactgctg ctgcagctga aaatatgtat actcagatgg gattagacac tagaccgtct 360
 acaaaagaag cgggaggaaa agaggaaggc cctccacagg catatcctat tcaaacagta 420

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aatggagcac cacaatatgt agcacttgac ccaaaaatgg tgtccatttt tatggaaaag 480
gcaagagagg gattaggagg tgaggaagtt caactatggt ttacagcctt ctctgcaaat 540
ttaacaccta ctgacatggc cacattaata atggccgcac ccgggtgcgc tgcagataaa 600
gaaatattgg atgaaagctt aaagcaattg acagcagaat atgatcggac aaatccccct 660
gatggtccta gaccattacc ctattttact gcagcagaaa ttatgggtat aggattaact 720
caagaacaac aagcagaagc aagatttgca ccagctagga tgcaatgtag agcatgggtat 780
cttgaggcat taggaaaatt agccgccata aaggctaaat ctctcgcagc tgtgcagtta 840
agacaaggag ctaaggaaga ttattcatcc tttatagaca gattgtttgc ccaaatagat 900
caagaacaaa atacagctga agttaagtta tatctaaaac agtcattaag catagctaata 960
gctaattgcag aatgcaaaaa ggcaatgagt catcttaagc cagaaagtac cctagaagaa 1020
aagttgagag cttgtcaaga gataggatcc ccaggatata aaatgcaact cttggcagaa 1080
gctcttacia aagttcaagt agtgcaatca aaaggatcag gaccagtgtg ttttaattgt 1140
aaaaaaccag ggcattctagc aagacagtgt agagatgtga aaaaatgtaa taaatgtgga 1200

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<210> 46

<211> 795

<212> DNA

<213> Feline immunodeficiency virus

<400> 46

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gcagctgaaa acatgtataa tcaaattggga ttagacacta gaccgtctac aagagaagca 120
ggaggaaaag aggaaggccc tccacaggca tatcctattc aaacagtaaa tggagcacct 180
caatatgtag cacttgaccc aaaaatgggtg tccattttta tggaaaaagc aagagaagga 240
ttaggagggtg aggaagttca actatggttt actgccttct ctgcaaattt aacacctact 300
gacatggcca cattaataat ggccgcacca ggggtgtgctg cagataaaga aatattagat 360
gaaagcttaa agcaattgac agcagaatat gatcgtacac atccccctga tgctcctaga 420
ccattaccct attttactgc agcagaaatt atgggtatag gattaactca agaacaacaa 480
gcagaagcaa gatttgcacc agctaggatg cagtgtagag catgggtatct tgaggcatta 540
ggaaaattgg ccgccataaa agctaagtct cctcgagctg tgcaagttaag acatggagct 600

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aaggaggatt attcatcctt tatagacaga ttgtttgccc aaatagatca agaacaaaat 660
 acagctgaag ttaaattata tttaaaacag tcattaagca tagctaattgc taatgcagaa 720
 tgtaaaaaag caatgagtca ccttaagcca gaaagtaccc tagaagaaaa gttgagagct 780
 tgtcaagaag tagga 795

<210> 47

<211> 1353

<212> DNA

<213> Feline immunodeficiency virus

<220>

<221> misc_feature

<222> (612)..(612)

<223> n = a, c, g, or t.

<400> 47
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 atggctaacg tatctacagg acgagaacct ggtgatatac cagagacttt agatcaacta 180
 aggttggtta tttgcgaatt acaagaaaga agagaaaaat ttggatctag caaagaattg 240
 gacatggcaa ttactacatt aaaagtcttc gcggtagtag gactttttaa tatgacagtg 300
 tctactgctg ctgcagctga aaacatgtat actcagatgg gattagacac caggccatct 360
 acaagagaag caggaggaaa agaggaaagc cctccacagg catatcctat tcaaacagta 420
 aatggagcac cacaatatgt agcacttgac ccaaaaatgg tgtccatttt tatggaaaag 480
 gcaagagaag gactaggagg tgaggaagtt caattatggt ttactgcctt ctctgcaaatt 540
 ttaacaccta ctgacatggc cacattaata atggccgcac cagggtgctg tgcagataaa 600
 gaaatattgg angaaagctt aaagcaattg acagcagaat atgatcgtac acatccccct 660
 gatggtccca gaccattacc ctattttact gcagcagaaa ttatgggcat aggattaact 720
 caagaacaac aagcagaagc aagatttgca ccagctagga tgcagtgtag agcatggtat 780

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cttgaggcat taggaaaact ggccgccata aaggctaaat ctctctgagc tgtgcagtta      840
agacaaggag ctaaagaaga ttattcatcc tttatagaca gattgtttgc ccaaatagat      900
caagaacaaa atacagctga agttaagtta tattttaaac agtcattaag cattgctaata     960
gctaattgcag aatgtaaaaa ggcaatgagc caccttaagc cagaaagtac cctagaagaa    1020
aagttgagag cttgtcaaga agtaggctca ccaggatata aaatgcaact cttggcagag     1080
gctcttaca aagttcaagt agtacaatca aaaggatcag gaccagtgtg ttttaattgt     1140
aaaaaaccag gacatctagc aagacagtgt agagatgtga aaaaatgtaa taaatgtgga     1200
aagcctggtc atttagctgc caaatgttgg caaggtggta aaaagaattc gggaaacggg     1260
aaggcggggc gagctgcagc cccagtgaat caagtgcagc aagcagtaat accatctgca     1320
ccttcaatag aggagaaact attggattta taa                                  1353

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<210> 48

<211> 795

<212> DNA

<213> Feline immunodeficiency virus

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<400> 48
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gcagctgaaa atatgtatgc tcagatggga ttagacacca gaccatctat aaaagaaagt     120
gggggaaaaag aagaaggacc tccacaggct taccctattc aaacagtaaa tggagcacca     180
cagtatgtag cccttgatcc aaaaatgggtg tccattttta tggagagagc aagagagggg     240
ctaggagggtg aggagggtcca actgtgggtc acagcctttt cagctaattt aacatcaact     300
gatatggcta cattaattat gtccgcacct ggctgtgcag cagttaaaga aattctagat     360
gaaacactga aacagatgac agctgagtat gatcgtacct atcctcctga tgggcctaga     420
ccgctgccct atttcactgc cgcagagatt atggggatag gattaactca agaacaacaa     480
gcagagccca ggtttgcacc agccagaatg cagtgtagag catggtacct tgaagcatta     540
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aaagaggact attcctcatt catagataga ctatttgctc aaatagatca agagcagaac     660
acagctgaag taaagctgta tttaaaacaa tctttaagta tagccaatgc taatccagat     720
tgtaaaagag caatgagtca tcttaaacca gaaagtactt tagaggaaaa actgagggcc     780

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tgccaagaag tagga

795

<210> 49

<211> 795

<212> DNA

<213> Feline immunodeficiency virus

<400> 49

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gggggaaaag aagaaggacc tccacaggct taccctattc aaacagtaaa tggagcacca	180
cagtatgtag cccttgatcc aaaaatgggtg tccattttta tggagaaggc aagagagggg	240
ctaggagggtg aggaggtcca actgtgggtc acagcctttt cagctaattt aacatcaact	300
gatatggcta cattaattat gtccgcacct ggctgtgcag cagataaaga aatcctagat	360
gaagcactga aacagatgac agctgagtat gatcgtaccc atcctcctga tgggcctaga	420
ccgctgccct atttcactgc cgcagagatt atggggatag gattaactca agaaccacaa	480
gcagagccca ggtttgcacc agccagaatg cagtgtagag catggtacct tgaagcatta	540
ggaaagtgg cgccataaaa agccaaatct ccccgagcag tacaattgaa gcaggaggct	600
aaagaggact attcctcatt catagataga ctatttgctc aaatagatca agagcagaac	660
acagctgaag taaagctgta tttaaaacac tctttaagta tagctaattgc taatccagat	720
tgtaaaagag caatgagaca tcttaaacca gaaagtactt tagaggaaaa 'actgagggcc	780
tgccaagaag tagga	795

<210> 50

<211> 795

<212> DNA

<213> Feline immunodeficiency virus

<400> 50

accactttaa aagtttttgc agtggcagga attctaaata tgactgtatc tactgccaca	60
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gcagctgaaa atatgtatgc tcagatggga ttagacacca gaccatctat aaaagaaagt 120
 gggggaaaag aggaaggacc tccacaggct taccctattc aaacagtaaa tggagcacca 180
 cagtatgtag cccttgatcc aaaaatgggtg tccattttta tggagaaggc aagagagggg 240
 ctaggagggtg aggagggtcca actgtgggtc acagcctttt cagcaaattt aacatcaact 300
 gatatggcta cattaattat gtccgcacct ggctgtgcag cagataaagg aatactagat 360
 gaaacgctga aacagatgac agctgagtat gatcgtaccc atcctcctga tgggcctaga 420
 ccgctgccct atttcaactgc cgcagagatt atggggatag gattaactca agaacaacaa 480
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 aaggaggact attcctcatt tatagataga ctatttgctc aaatagatca agagcagaac 660
 acaactgaag taaagctgta tttaaaacaa tctttaagta tagccaatgc taatccagat 720
 tgtaaaagag caatgagtca tcttaaacca gaaagtactt tagaggaaaa actgagggcc 780
 tgccaagaag tagga 795

<210> 51

<211> 1350

<212> DNA

<213> Feline immunodeficiency virus

<400> 51

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 atggctaattg taactacagg acgagaacca ggtgatatac cagagacttt agaacagtta 180
 agatcaatta tttgtgattt acaaggcaga agagaacact atggatctag taaggaaatt 240
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 tctactgccca cagcagctga aaatatgtat gctcagatgg gattagacac cagaccatct 360
 gtaaaagaaa gtgggggaaa agaagaagga cctccacagg cttatcctat tcaaacagta 420
 aatggagcac cacagtatgt agcccttgat ccaaaaatgg tgtccatttt tatggagaag 480
 gcaagagagg ggctaggagg tgaggaggtc caactgtggg tcacagcctt ttcagctaatt 540
 ttaacatcaa ctgatatggc tacattaatt atgtccgcac ctggctgtgc agcagataaa 600

gaaatcctag atgaaacact gaaacagatg acagctgagt atgatcgtag ccatcctcct 660
 gatgggccta gaccgctgcc ctatttcact gccgcagaga ttatggggat aggattaact 720
 caagaacaac aagcagagcc caggtttgca ccagccagaa tgcagtgtag agcatggtag 780
 cttgaagcat taggaaagt ggcgccata aaagccaaat ctccccgagc agtacaattg 840
 aagcaggag ctaaagagga ctattcctca tttatagata gactatttgc tcaaatagat 900
 caagagcaga acacagctga agtaaagctg tattttaaac aatctttaag tatagccaat 960
 gctaatccag attgtaaaag agcaatgagt catcttaaac cagaaagtac tttagaggaa 1020
 aaactgaggg cctgccaaaga agtaggatca ccaggatata aaatgcaatt gctggcgga 1080
 gctctcaciaa gggttcaaac agttcaaaca aaaggaccaa ggctagtgtg tttcaattgt 1140
 aaaaaaccag gccacctggc tagacaatgt aaagaagcga agagatgtaa taactgtgga 1200
 aaacctggtc acttagctgc taattgctgg caaggaggta ggaaaacctc gggaaacgag 1260
 aaggtggggc gagctgcagc ccagtaaac caagtgcagc aaatagtacc atctgcacct 1320
 ccaatggagg agaaaactatt agatttataa 1350

<210> 52

<211> 795

<212> DNA

<213> Feline immunodeficiency virus

<400> 52

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 gggggaaaag aagaaggacc accacaggct tatcctattc aaacagtaaa tggagcacca 180
 cagtatgtag cccttgatcc aaaaatgggtg tccattttta tggagaaggc aagagagggg 240
 ctaggagggtg aggagggtcca actgtgggtc acagccttct cagcaaattt aacatcaact 300
 gatatggcca cattaatcat gtccgcacct ggctgtgcag cagataaaga aatactagat 360
 gaaacactga aacagatgac agctgagtat gatcgtagcc atcctcctga tgggcctaga 420
 ccgctgccct atttcactgc cgcagagatt atggggatag gattaactca agaacaacaa 480
 gcagagccca ggtttgcacc agccagaatg cagtgtagag catggtacct tgaagcatta 540

ggaaagttgg cgcccataaa agccaaatct ccccgagcag tacaattgaa gcagggagct 600
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 acagctgaag taaagctgta tttaaaacaa tctttaagta tagccaatgc taatccagat 720
 tgtaaaagag caatgagtca tcttaaacca gaaagtactt tagaggaaaa actgagggcc 780
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<210> 53

<211> 1344

<212> DNA

<213> Feline immunodeficiency virus

<400> 53

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 aatgtaacta caggacgtga acctgggtgat ataccagaga ccttagatca actgagagta 180
 cttatctgtg atttacagga aagaaggagg aaatttggat ctagcaaaga acttgatatg 240
 gcaatcctca ctctaaaagt ttttgtagta gcaggagtct taaatatgtc tgtatctact 300
 gctactgccg ctgaaaatat gtatgctcag atgggattag atactagacc atcttttaaag 360
 gaggcaggag gaaagataga ggagcctcca caggcatatc ccatccaaac aataaatgga 420
 gcgccacaat atgtagccct ggatcctaaa atgggtgtcca tttttatgga aaaagcaaga 480
 gaaggattag gaggagagga ggtccaacta tggtttactg cattttcagc taatctaaca 540
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 cccagacctc tgccatattt tactgcagca gaaattatgg gaatagggtt aactcaggaa 720
 caacaagcag aacctagatt tgcaccagca agaatgcagt gtagagcatg gtatctcgaa 780
 gcattgagta agttggcagc cctaaaggct aaatctcctc gagctgtgca gatgaaacaa 840
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 ccagactgta agagggcaat gagccatttg aaaccagaaa gtaccctaga agaaaagttg 1020
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acaaaagttc aaacagttca agcaaaaagga ccaaaaccag tatgttttaa ttgtaaaaaa 1140
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ggtcatttgg ctgccaaatg ttggcaagga agcagaaatg cttcgggaaa cggaagatg 1260
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<212> DNA

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ggaggaagaa tagaggagcc tccgcaggca taccctatcc aaacaataaa tggagcacca 180
caatatgtgg ccctggatcc taaaatgggtg tccattttca tggaaaaggc aagagaagga 240
ttaggaggag aggaagttca attatggttt actgcatttt cagctaattt aacatcaact 300
gatatggcta cattaatcat gtctgcacca ggttgtgcag cagataagga aattttagat 360
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cctctgccat actttactgc agcagaaatt atgggaatag gattaactca ggaacaacaa 480
gcagaaccta gatttgcacc agcaagaatg cagtgtagag catggtatct cgaagcattg 540
agtaagttgg cagccctaaa ggctaaatct cctcgagctg tgcagatgaa acaaggggtg 600
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acagctgaag taaagttgta tttaaaacag tctttaagta tagctaattg taaccagac 720
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<210> 67

<211> 76

<212> DNA

<213> Feline immunodeficiency virus

<400> 67

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<213> Feline immunodeficiency virus

<400> 68

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gacccaaaaa tgggtgtccaa 80